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# THE FARM INDEX

U.S. Department of Agriculture/May 1972

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# Outlook

**Soybeans, the Cinderella crop that took off in the 1950's, hasn't lost its luster for American farmers.** This makes the 12th year in a row that they'll sow a record acreage. Every region expects more beans for a total of 45½ million acres, up 5 percent from 1971.

If they follow through on their March 1 intentions, and if the acreage-share harvested for beans is near normal, growers would harvest 44½ million acres. This would produce a record crop of 1¼ billion bushels (compared with 1,169 million last year), allowing for slight uptrend in yields.

The soybean supply-demand balance will continue tight, even though supplies may increase 3-4 percent. Carryover next September 1 will be drawn down to minimum operating levels, possibly around 70 million bushels—equal to a 3-weeks' supply.

Pricewise, ERS figures farmers' prices for soybeans will keep firm, supported by strong domestic and export markets. For 1971-crop soybeans, the average price for the season is estimated at \$3 a bushel, highest since 1947/48. So far, farm prices have advanced from \$2.84 per bushel last November to \$3.20 this March, averaging a little under \$3. They're expected to strengthen further as soybean supplies dwindle.

**This year's increase in fed cattle marketings promises to be the biggest since 1969.** That's how the picture shaped up in early April, when ERS livestock specialists were projecting a 4-6 percent gain in 1972 marketings from a year ago. Key indicators: a 9-percent jump in cattle on feed at the start of this year; and the likelihood that large placements in January-June will boost marketings in the second half. Placements are being spurred by a big supply of feeder cattle this year, higher prices for fed cattle, and plentiful feed grains at favorable prices.

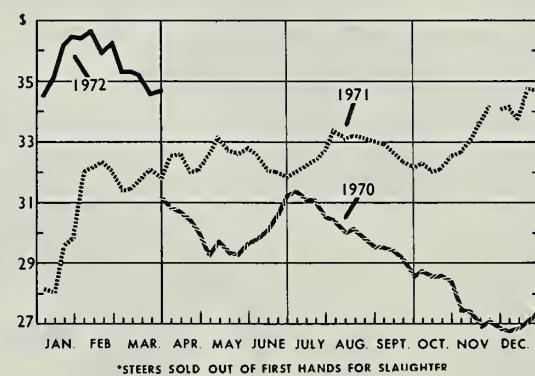
For the spring period, commercial beef production is seen moderately larger than a year ago. The expected gain in fed cattle marketings, along with heavier marketing weights, will more than compensate for a drop in cow slaughter. Taking the first half of the year, beef production is slated to rise 3-4 percent. Most of the increase will come in the second quarter.

Fed cattle prices in April-June are likely to top the average of the same months last year, when Choice steers fetched about \$32.60/cwt. at Omaha. Feeder cattle prices will stay above last summer's, but fall prices might trail the October-December 1971 average of \$36.60/cwt.

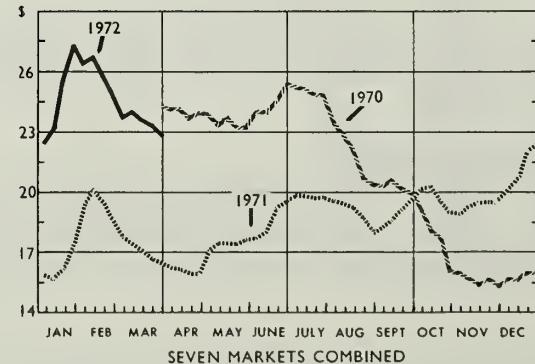
Attractive prices for feeders in '71 and so far this year will stimulate further build-up in beef herds. Also, calf slaughter is likely to continue to back off, leaving more calves for feeding.

**Hog producers are still applying the brakes to output. The question is, will the deceleration extend into**

## CHOICE STEERS, OMAHA



## AVERAGE PRICE BARROWS AND GILTS



**1973?** That depends on the June-November farrowing intentions, only part of which are contained in the March 21 Hogs and Pigs report.

After a 6-percent reduction in the December-February pig crop—estimated at 13.3 million—producers in 10 Corn Belt States said they intend to have 7-percent fewer sows farrow in both March-May and June-August.

However, hog prices picked up in the winter. And, prices for barrows and gilts at seven major markets are projected at least \$5 higher this April-June than in the second quarter of '71, when they averaged \$17.30. Meantime, corn prices are lower this year, and the hog/corn price ratio through mid-April was running 22 to 1. In the first half of 1971 it was only 12 to 1.

All of which adds up to the possibility that with improved profits, hog producers will be gearing up to expand pig output in the future. Thus, the late fall crop may not be down nearly as much as the spring crop or the early fall crop. Pigs born during the fall farrowing season will show up in the first half 1973 slaughter.

**Better days lie ahead for feed grain producers . . . providing they stick to their March 1 planting intentions.** Generally, corn farmers do carry out their planting intentions, says the April issue of ERS's *Feed Situation*. But there have been exceptions. Last year was a case in point.

Producers in '71 planted about 2½ million acres more than they had planned to on March 1. Good weather at spring planting and attractive corn prices were instrumental.

This year soybean prices are high and corn prices low, so weather at planting time will again be crucial to final plantings. Given normal weather, farmers' acreage plans would yield a feed grain crop of 190 million tons—15 million under the bumper outturn of 1971.

# Contents

"Fairly close balance" is in store for feed grain production and usage, the economists report. And, "prices would be more stable, and higher at harvesttime than the low levels in 1971."

Feed demand will probably stay strong. Continued liberal feeding rates—plus the prospect of a 2-3 percent increase in the number of grain consuming animal units—will boost grain requirements. They are expected to climb 4-5 million tons from the 163 million estimated for this year. That, with exports of 21 million tons (near the level of the past 2 or 3 years), would give total feed grain requirements of close to 190 million tons, or nearly the same as the projected production figure.

The 1971 corn crop got high marks for quality. A recent analysis, based on samplings at country and terminal points, shows 73 percent graded No. 3 or better. Incidentally, the 1970 crop was also of good quality (67 percent No. 3 or better), the blight notwithstanding.

**Not since 1947/48 has the cotton supply been so small.** It's estimated at 14½ million bales for the 1971/72 season, 1½ million under last year's. The ending carryover this August will fall to about 3½ million bales, on the assumption domestic mills and exporters take a little over 11 million bales.

Mill use may match last year's 8.1 million bales, in spite of smaller and more costly supplies and stiff competition from man-made fibers. Total cotton use is being shored up by surging demand for cotton denim and corduroy in particular.

The export trade became more active in recent months. But for the full season, shipments will be down . . . possibly to a little above 3 million bales. In 1970/71, exports totaled 3¾ million.

By the March 1 intentions report, cotton farmers indicated they'd plant around 13½ million acres, 10 percent more than in 1971.

## FARM

## RURAL

## MARKETING

## CONSUMER

## FOREIGN

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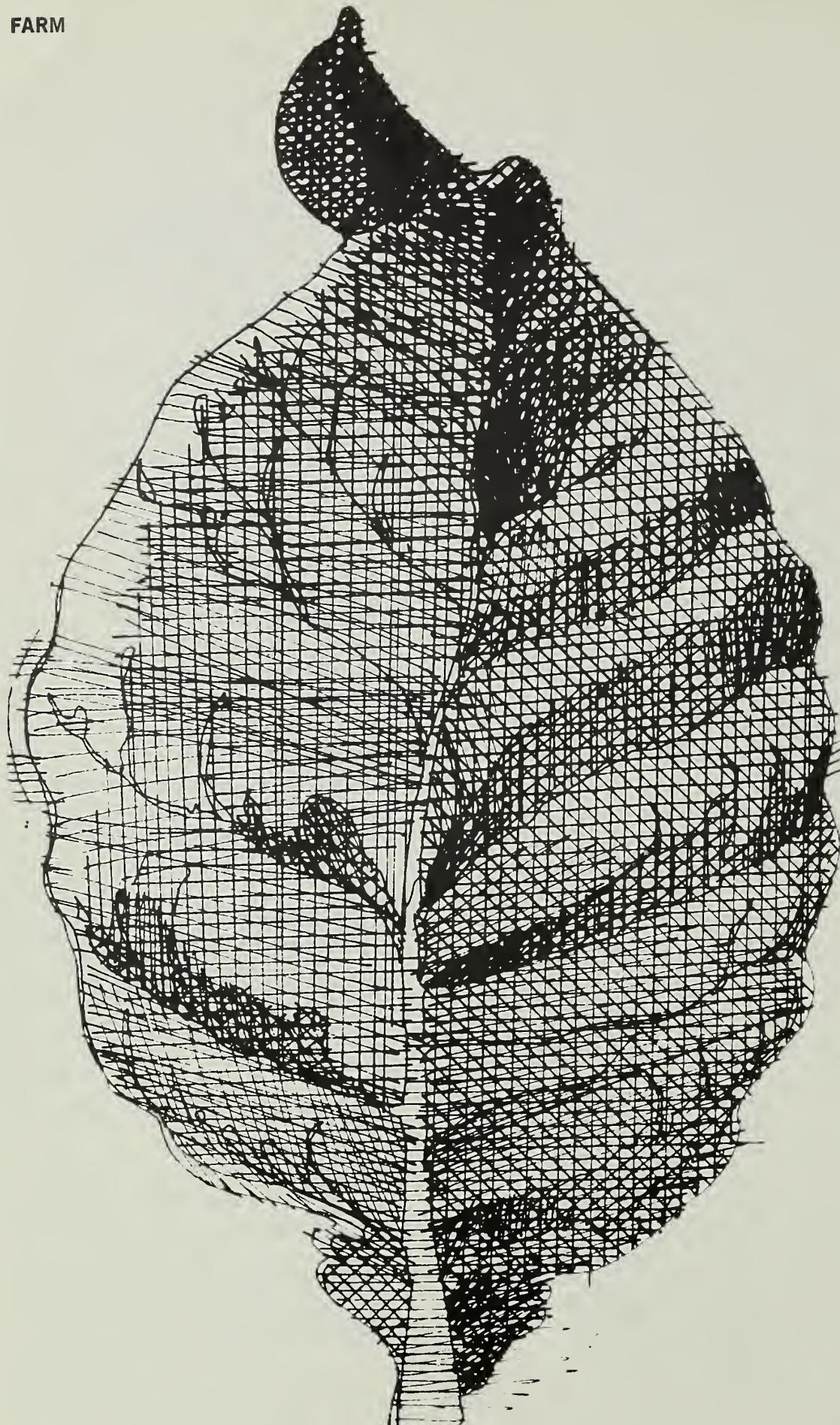
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# Tobacco Wrap-up

the harvester's headway

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*Mechanization of the flue-cured tobacco harvest has been a long time coming, but recent trends in the tobacco industry stand to hasten the machine's takeover.*

Despite long resistance to mechanical harvesting, flue-cured tobacco will inevitably succumb. Just how soon is a moot question. Research and development are making rapid advances toward mechanization, but several barriers still block the machine's advance.

ERS economists worked up a progress report based on discussions at the 24th Tobacco Workers Conference held last January in Chattanooga, Tenn.

The three manufacturers of automatic leaf harvesters reported they had 26 machines operating in the Southeast flue-cured area in 1971. This year, the manufacturers expect to have up to 100 machines in the field.

The automatic leaf harvesters can shave harvest time to about 40 hours per acre—compared with 190 hours using conventional methods. The machines are multi-pass types designed for selective leaf removal. A full prototype once-over system that will further reduce harvest time has yet to be developed.

Agricultural engineers at experiment stations in the flue-cured area are seeking ways to make current models of the leaf harvester more efficient. The machine's production capacity might be expanded 50 percent if manual labor requirements were reduced and deficiencies that cause machine stoppage were ironed out.

Some of the work in progress:

- Development of an automatic steering device to hold the machine on the row. (Present models sometimes snap across rows if they encounter missing plants.)
- Changing handling techniques to trim manual lifting and other hand labor time.
- Experiments with flue-cured tobacco cut in various sizes and shapes, and cured in several types of

containers. Manufacturers currently oppose tobacco cured in this form, but further developments in "cut and shredded tobacco" could have a profound impact on harvesting and curing of the flue-cured crop.

Though engineers are continually upgrading the harvester's efficiency, several factors still impede the shift to machines.

Cost is a major barrier. Time and expense of harvesting may be pared substantially with total mechanization; however, the initial investment in a complete system is prohibitive, particularly to small growers.

Last year, mechanical harvesters retailed for \$12,000 to \$14,500. Bulk barns, with capacities for 3.5 and 6 acres of tobacco, sold for roughly \$4,200 and \$5,600, respectively. Nowadays the adoption of mechanized harvesting requires an investment of about \$17,000 for 3 acres, \$23,000 for 10 acres, and up to \$52,000 for 40 acres.

Assuming wage rates of \$1.45 an hour, economists figure a farm needs at least 22 acres in tobacco to justify the switch from conventional to fully mechanized harvesting. Justification of a switch from some intermediate types of mechanization requires an even larger acreage. This underscores another stumbling block—many tobacco units are simply too small to mechanize.

The flue-cured production control program restricts formation of large units from several small allotments. Provisions also specify that tobacco acreage can't exceed 50 percent of a grower's total cropland. Tobacco allotments may not be transferred across county lines, and sale of allotments without the land is forbidden.

Another problem lies in the reluctance of growers to abandon traditional cultural techniques in favor of methods more compatible with mechanized harvesting. Farmers who have used the harvesters, but ignored recommended cultural practices, have suffered efficiency loss.

Manufacturers of the leaf harvesters claimed that recurrent problems in 1971 included improper row spac-

ing, poor pest and weed control, and too little turning space at the end of rows.

In addition, the manufacturers cited a need for varieties of tobacco that hold their yellow longer, so the harvesting season can be extended to offset interruptions such as bad weather conditions.

Among developments hastening mechanization are rising wage rates for tobacco laborers, coupled with a decline in the number of qualified workers. Also significant are improved machines, competition from lower-priced foreign tobaccos, an ebbing of manufacturers' resistance to tangled leaf tobacco, and the possible easing of restrictions governing transferral of allotments. (1).

## Milk Cow Sell-Off Slackened in '71

More than 12 million milk cows have left the Nation's dairy herd since World War II, almost as many as remain today. The count on January 1, 1972, showed just 12.3 million.

That inventory, however, also revealed the smallest annual decline in herd size since 1954.

Eight States had more milk cows on January 1, 1972, than a year earlier: Michigan, Wisconsin, Georgia, Florida, Arizona, Utah, Washington, and California.

Most of the decrease was in the Northern Plains and the Corn Belt. But even in the Corn Belt, where many dairy farmers have switched to other enterprises, the rate of decline tapered during 1971-72.

Last year's good supply of replacement heifers and the record high milk prices no doubt contributed to the improved herd retention. Another factor may have been that dairy farmers and workers had fewer off-farm job opportunities.

As 1972 began, the supply of replacement stock seemed adequate to again hold the annual drop in cow numbers to a low rate. The ratio of heifer replacements to milk cows reached 32.1 per 100 cows, up from 31.7 a year ago. (6).

## Advice to Calf Owners: Fatten Before Selling

Colorado cattlemen can up their net ranch income considerably by retaining and fattening their calves in custom feedlots and by improving ranch management, according to a study by Colorado State University in cooperation with ERS.

If ranchers had their calves fattened instead of selling them as weaners or yearlings, they might increase net income by nearly 40 percent with a 1-percent increase in labor use. Operating capital requirements, however, would be at least 2½ times greater.

The improved ranch management program would involve taking full advantage of current research in cattle production, including a restricted breeding season better nutrition prior to breeding, crossbreeding, artificial insemination, selection of superior bulls, and beef cow production records. Such a program in itself could increase net income from selling weaner calves by about 40 percent. This would be done with roughly 20 percent more labor and 15 percent more operating capital.

The combined program—retaining ownership of the calves and improved management—could increase net income by about 85 percent.

For the average ranch operation, two factors might stand in the way of such a program: the high operating capital requirements and the managerial ability of the rancher.

The study was based on analysis of a 200-cow operation, with 4,400 acres of dry range, and year-round grazing with supplemental feeding for 5 months during the winter. Without the combined program, gross income to the ranch business from the sale of calves and cull cows was \$16,773, with net return \$6,532. Invested capital in land, facilities, equipment and breeding stock—at current market value—was approximately \$302,303.

The above conclusions should be applicable to other areas with similar cost structures. (2)

## Wheat Reaps Greater Use As Feed Grain

Wheat has become a rising star on the feed horizon in the U.S. in less than a decade . . . but what's ahead?

Wheat's upsurge as a feed grain stems primarily from the restructuring of wheat price support loan rates in 1964/65, making wheat more competitive with feed grains. Abundant wheat supplies and more cattle feeding in wheat areas have also contributed to the dramatic growth in use of wheat for feed.

About 15 percent of total wheat production went into feed in each of the past 3 years, compared to 5 percent during 1960-68. Wheat for feed has exceeded 200 million bushels for the past 3 years, compared to the 1960-68 average of 75 million bushels.

Use of wheat for feed varies considerably by region. Over the past decade wheat fed by the farmer producing it has increased sharply in the hard winter and red winter wheat area with smaller increases elsewhere.

In a region-by-region analysis, ERS pinpoints the Southern Great Plains and the Southeast with the greatest potential for increased wheat feeding—dependent, of course, on whether wheat prices stay competitive with feed grains.

The Southern Great Plains—our hard red winter wheat region—is already the major user of wheat for feed. It accounts for about half of the total. Due to vast producing power both for wheat and cattle, it also has the greatest potential, assuming wheat remains competitive with locally grown sorghum and imported corn. Growth so far has been a result of abundant supplies and competitive pricing of wheat plus rapid expansion of cattle feeding in the region.

The Southeast, traditionally deficit in feed grains, has had a sharp expansion in livestock feeding, and this has increased the area's already large potential for wheat feeding.

Except for the Southeast, the rest of the eastern soft wheat area has ample supplies of feed grains, and little wheat is fed.

In the Northern Great Plains, the hard red spring and durum wheats basically supply the export and domestic milling markets. There is little history of wheat feeding in this area since most wheat is supported well above the prices of locally grown feed grains. Livestock numbers have been fairly stable, and cattle feeding has increased only moderately. Feed grain production appears sufficient to meet demand.

In the West, the white wheat area is essentially a supplier to the export

market. Wheat not required by domestic mills is soon moved into position for export. Though a feed deficit region, wheat feeding here has increased only moderately. Wheat has been priced competitively with barley when respective feeding values are considered. Yet there is a reluctance to feed wheat. Use as a feed averages only about 5 percent of the crop. (3)

## Casein Users Caught Short as Supplies Ebb

World casein supplies remain in a squeeze this year, with little easing of the situation in prospect.

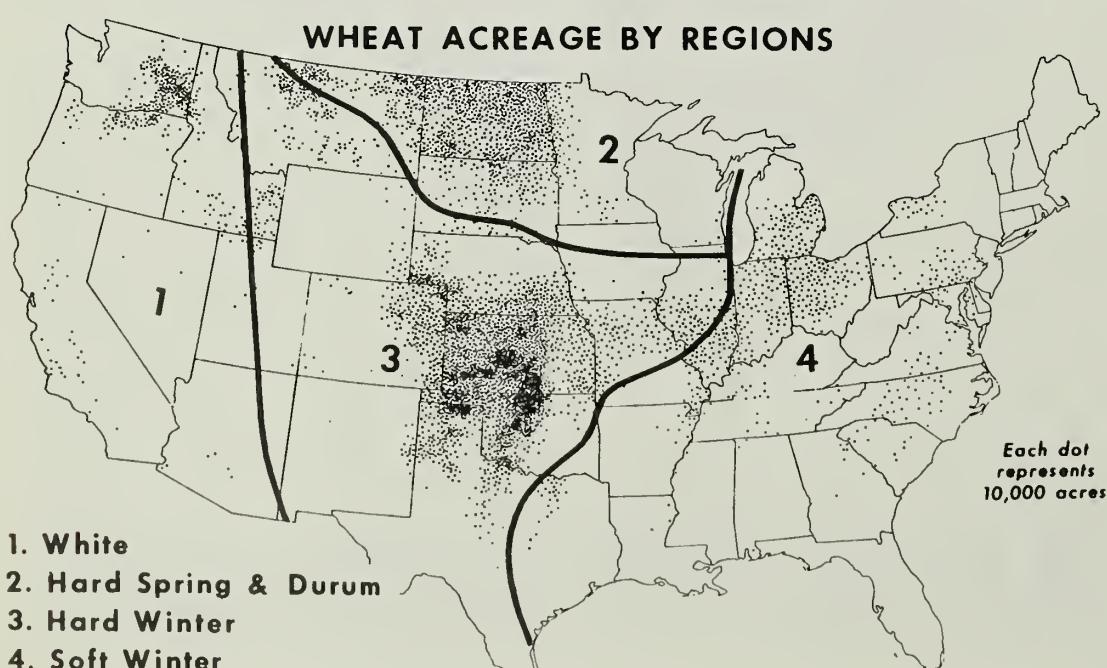
Casein is the main protein in milk, and makes up about a third of non-fat milk solids. A casein shortage affects U.S. food and feed manufacturers, as well as industrial processors, who rely on imports for nearly all their casein needs.

Casein is used in processing paper, wallboard, plywood, plastic, paints, glues, pharmaceuticals and cosmetics. High prices resulting from scarce supplies have triggered a search for substitutes, but casein's unique properties often defy duplication. For example, casein coating on paper products breaks down more readily in recycling than many other paper coatings.

In recent years, the fastest growing use for casein (caseinates) has been in food items, particularly imitation dairy products such as whipped toppings, coffee whiteners, whipped powders, imitation cheese, and imitation milks.

World casein supplies began to tighten in 1970, when drought reduced New Zealand's milk output nearly 15 percent. Milk production also waned in Australia, which teams with New Zealand to supply two-thirds of the world's casein exports. Meantime, Argentina reported a smaller outturn, while drought and dairy policy measures crippled production in Western Europe.

All told, world casein output in 1970 plunged 12 percent below a year earlier to the lowest level since the late 1950's.



Mounting demand for cheese compounded the problem for casein users. Throughout the sixties, per capita cheese consumption in developed countries edged up 3 percent annually. Increased quantities of milk were diverted from butter to cheese production, depriving casein manufacturers of the skim milk needed to make casein.

More recently, strong bidders for skim milk supplies have been the producers of nonfat dry milk. As world dairy supplies dwindled and prices soared, nonfat dry milk production became increasingly profitable. Prices for this product jumped from 9¢ a pound in mid-1970 to around 30¢ by March 1972.

Though milk production in New Zealand increased last year, casein output continued to slip as production of nonfat dry milk accelerated. Production for the 1971/72 year, which ends in May, is estimated at 92 million pounds—down 60 million pounds from the 1968/69 peak.

Milk output in Western Europe recovered a little in 1971, but cheese processing expanded. Argentina posted slight gains in casein stocks when milk production rose late in the year.

On the world market, casein imports skidded 13 percent last year, after peaking at 320 million pounds in 1970 when stocks were still plentiful. U.S. imports dropped more than a fifth.

Early this year, casein offers from producing countries were limited, and prices continued firm. Trading was light as buyers took a wait-and-see attitude.

Some Australian edible casein for late '72 delivery sold at 74¢ per pound, but some offerings at 75¢ went unsold. (As recently as 1970, casein sold for 25¢ per pound.) Negotiations for New Zealand casein for fall delivery will get underway at midyear.

Casein supplies are expected to remain short throughout the year, and prices will hold firm. Skim milk will continue to be diverted from casein as long as nonfat dry milk prices remain high. Also, growing demand

for foods using caseinates (casein converted to a soluble form) will shore up casein prices.

The situation could alter somewhat, however, if nonfat dry milk becomes too costly for the veal feeding industry in Western Europe. Stocks might then accumulate, and prices could drop. (5)

## Hired Farm Labor Force Marks 1st Gain in 4 Years

The hired farm working force totaled about 2.6 million persons last year—some 65,000 more than in 1970. It reverses a steady drop in the labor force since 1967 when there were nearly 3.1 million hired farmworkers.

The "typical" worker in 1971 was 22, white, male, did not live on a farm, put in 76 days of farm wage-work at \$11.60 a day, from which he earned a total of \$882 in cash wages.

The rise in the labor force stems from an additional 100,000 "casual workers," persons who do less than 25 days of farm wagework a year. The rest of the labor force, those who do more than 25 days of wage-work, decreased by 35,000.

Such information comes from a sample survey enumerated annually by the Census Bureau for ERS. It focuses on persons 14 years of age and older who've done farmwork for cash wages or salary sometime during the year.

Only 484,000 people, or about one in five of those sampled, listed farm wagework as their main occupation. About 285,000 of these were year-round workers, the highest paid and the most fully employed in the survey. They worked an average of 317 days and earned \$3,800 in farm wages.

Nearly three in five were not in the labor force most of the year. Most were housewives or students.

The number of domestic migratory workers—those who've worked out of their home counties—continued to decline for the fourth straight year. They numbered 172,000 in 1971—7 percent of the total hired

farm labor force and 12 percent fewer than in 1970.

In all, hired farmworkers did 195 million man-days of work on farms in 1971—one-fourth of the total number of days of labor on farms.

Nearly half of the hired farm labor force consists of casual workers. These 1.2 million persons—10 percent more than in 1970—averaged 9 days of farm work at \$9.90 a day.

The rest of the labor force—those who put in more than 25 days a year at farm work—averaged 135 days and \$1,576 in wages. Western workers earned the highest average wage, \$15 a day, while those in the North Central States received the lowest, \$9.55.

Other statistics reveal that:

- About three out of four hired farmworkers are male;

- Nearly four out of five are white;

- More than a third are young people, age 14 to 17;

- Nearly three out of four lived in nonfarm dwellings in 1971, though they may have stayed on farms sometime during the year;

- About 37 percent also performed some nonfarm work during the year, averaging 111 days of such work at \$17.20 per day and earnings of \$1,908 per year.

- About 44 percent lived in the South, 25 percent in the North Central States, 22 percent in the West, and 9 percent in the Northeastern States.

To get a better picture of trends in the hired farm labor force, ERS compared averages for 1966-68 and 1969-71. The comparison shows that:

- Total number of hired farmworkers dropped about 13 percent. The drop was the least (about 10 percent) among those doing less than 75 days of farmwork, and highest—(22 percent) among workers doing 75 to 249 days of farmwork. Those who did more than 249 days of hired farmwork declined in number by 18 percent.

- Total man-days of farm wage-work declined by about 18 percent in the same period. (8).

## Migratory Sheep Ranchers Set Production Record

Migratory sheep ranchers, for all their problems, continue to be an efficient group in general.

In our major migratory-sheep ranching area in Utah and Nevada, production set a new record last year, up more than a fifth from the 1960-64 average. Lamb weights and marketings and crop production were all at record highs. Lamb sales make up about 60 percent of ranchers' income, and weights have increased 15 percent over the past decade due to improved breeding and ranch management. This, despite the fact some of the important ranges used by producers have been cut 15 to 25 percent.

The favorable production picture, though, is offset somewhat by the ranchers' major problems: low wool prices, high labor costs, and increasing loss of lambs.

Wool prices—about 20¢ a pound last year—were the lowest since 1938, and in terms of 1958 constant dollars, the lowest on record.

Hired labor, the largest single operating expense, showed the greatest increase, nearly \$1,000 per ranch. Other operating expenses, such as grazing fees and feed, have also gone up considerably. Total operating costs were nearly 10 percent above those of 1970.

Lamb losses have risen, especially in the past 5 years, a fact that ranchers attribute to increased numbers of predators. Losses from all causes in 1967-71 averaged 13 percent over those in 1960-64.

Total cash receipts were a little higher for the ranchers in 1971 than in 1970 but 3 to 4 percent below the record high in 1969. Combined receipts from sales of sheep and lambs were a shade higher than in 1970. Prices received for lambs averaged about \$25.55 per hundredweight, 10¢ below a year earlier. Record high lamb weights offset the lower price, and total cash receipts from lamb sales were only a little below the record of 1969.

Net ranch income averaged

\$15,200 per ranch last year, nearly a fifth below 1970, although twice the 1960-64 average. Return to investment was about \$10,000—4.3 percent of total ranch capital—after deducting \$5,200 for the operator's labor and management.

Comparing these returns to those of Western cattle ranchers shows the average rate of return to be lower than the long-term rate on Rocky Mountain cattle ranches, but higher than the rate on Northern Plains cattle ranches.

After deducting interest paid in 1971 on the average \$62,000 mortgage and production loans carried by each rancher, return on the operator's \$169,000 equity capital averaged about 3.5 percent. (4)

## Elevators Lift Service Charges To Store Grain

Costs associated with storing grain in commercial elevators have risen one-third since 1964-65, a USDA study shows. The book cost for grain storage at 251 elevators averaged 8.9¢ per bushel in 1970-71, up from 6.7¢ in 1964-65. Main reasons for the increase were higher prices of inputs and lower occupancy of facilities.

In 1970-71 the book cost to handle and store grain in country warehouses averaged 13.8¢ a bushel compared with 11.4¢ in 1964-65. This included 1 year's storage plus receiving by truck and shipping by rail.

At inland terminals the book cost for receiving and shipping by rail in 1970-71 was 3.4¢ per bushel (3.7¢ in 1964-65) plus 6.8¢ for storage (6.6¢ in 1964-65).

For port terminals, the charge for receiving by rail and shipping by water was 2.2¢ per bushel and for storage 10¢. Costs for comparable services in 1964-65 were 2.1¢ and 7.5¢ respectively.

The study also shows that when costs reflect the 1970-71 replacement value of the elevator structures, the storage cost averages 14.9¢ per bushel. For projected 1972-73 price levels and volumes this cost will climb to 16.3¢ a bushel. (7)

## Soybeans, Cattle Compete For Louisiana Rice Lands

After rice, what?

For farmers in Southwest Louisiana's rice area, the question of what to do with extensive idle acreage left after planting their rice allotments has traditionally been answered by beef cattle enterprises.

Since 1964, more and more farmers have been turning to soybeans. Beef cattle production, however, remains important because many producers prefer it. Also, large acreages are not well suited for soybean production due to the fact soils in many areas are fine-textured clays with poor drainage.

To find out just what combination of crops and beef production systems would be most profitable, economists at Louisiana State University analyzed some of the effects of changing the prevailing production practices for beef cattle.

Among the conclusions:

—Before it would be profitable to plant idle rice land to improved pastures—with the exception of ryegrass for winter grazing—there would need to be higher calving rates (above 80 percent), heavier weaning weights (above 300 pounds), and relatively high prices (above \$24) per hundredweight.

—A possible alternative to raising beef cattle would be to specialize in grazing weanling calves for spring marketings.

—At present levels of output for beef cattle and soybeans (70-percent calving rate and 29.4 bushels per acre) and with the assumed prices (\$26 per hundredweight and \$2.50 per bushel), beef cattle per se cannot successfully compete with soybeans for land resources.

—To compete successfully with soybeans at the assumed price levels of \$26 per hundredweight for cattle and \$2.50 a bushel, beef cattle production practices would need to undergo some changes. One such change could be to market fall calves in the spring and winter them on ryegrass to heavier sales weights. (10)

# THE MULTIDIMENSIONAL INCOME \$GAPS\$

*Though they're catching up with the national averages, incomes of farm people still have a ways to go in terms of how the money is distributed among farm families.*

The gulf between incomes of farm and nonfarm families is proving to be as deep as it is wide.

The income gap has been closing for some time. Yet there remain

large inequities in how earnings are spread among farm families.

Median income of farm families, measured in constant 1964 dollars, grew nearly 7 percent a year in the 1960's, based on Current Population Surveys. (The median is the mid-point of the income distribution; i.e., half the families have incomes above the median and half below.) This was considerably more than the

change in the median for nonfarm families, whose income advanced slightly over 3 percent.

The total increase for the farm population came to 80 percent between 1960 and 1969, bringing the median income per family to \$5,430.

Steady rise in off-farm employment contributed much of the income gain for farm families. According to USDA estimates, off-

## WHO MAKES LESS THAN FARMERS?

Farm proprietors as a rule have lower incomes than their cousins in other industries. Farmers, though, aren't alone in this kettle of fish.

A breakdown of Federal tax returns for 1968 (latest available data) showed that of six major industry groups, only one—transportation, communication, and utilities—reported average incomes as low as those for proprietors of farms: \$7,600.

The farm group also had the lowest median, or mid-point, income of all: \$5,600. Moreover, 46 percent of these farm owners had incomes under \$5,000. No other group had so large a percentage.

This picture, however, takes on different dimensions when you look at the subgroups of industry. ERS took aggregate data on 35 major subgroups and classified them into three categories by me-

dian incomes—(1) less than \$6,500, industries with incomes similar to farmers'; (2) above \$6,500 but under \$10,000, and (3) more than \$10,000. All firms in this analysis are individually owned, not to be confused with partnerships and corporations.

In the first category, besides farm proprietors, were 15 industry subgroups. A third of these had incomes lower than in farming. They were lumber and wood manufacturing (excluding furniture), tourist courts and motels, gasoline service stations, taxicabs, and local transportation. Three of the 15 subgroups had incomes only \$100 above farming's—eating places, drinking places, and fisheries.

Taking the mean, or average, income figures, 10 subgroups had lower incomes than farm proprietors. In general, within each subgroup, income was more evenly

distributed than in farming although the level of income was similar to the farm group.

The 15 had these other characteristics in common—

Usually, the proprietor needed relatively small amounts of capital to get started, and required little formal training.

There were limited possibilities for firms to make their products different from their competitors'.

Firms in the second category of industry subgroups (above \$6,500 but less than \$10,000) sometimes involved skilled trades, like electrical work and plumbing. Others typically required more formal education than in the first category.

Category No. 3 (\$10,000 and up) included engineering services, legal services, advertising, and the like. Aside from the type of business organization, most of these have little in common with farm proprietors. (12)

farm earnings went up 8 percent a year between 1960-69, or 3 points more than net farm income.

When ERS economists analyzed the data from the Census Surveys, they also found a more even distribution in incomes as the decade of the sixties wore on. That was true for farm and nonfarm people alike.

Even so, the improvement in distribution for farm family income was much less striking than the change in incomes on the whole. A fairly large percentage of families continued to be clustered in the low-income classes and relatively few earned over \$15,000. And, the farm population's income continued to be less equally distributed than for nonfarm families.

In 1960 around 7 in 10 farm dwellers made less than \$5,000. Ten years later nearly 5 in 10 fell in this group. Nevertheless, in 1969 farm families still had a greater proportion in the under-\$5,000 class than the nonfarm families did 10 years earlier.

Of the nonfarm residents, about 4 in 10 made less than \$5,000 in 1960 but the ratio dropped to 2 in 10 in 1969.

The analysis of incomes by Census

region also turned up some differences in distribution. Of the four regions, the South's farm population was the worst off by far in both 1960 and 1969. The South's median income about doubled during the decade and it had the steepest growth rate of any region. Yet by 1969 the median was only 70 percent as great as the North Central's and 62 percent of the West's. Over half the South's farm families were earning less than \$5,000, despite 10 years of rapid income gains.

The North Central had the second largest growth rate. Families there still occupied the middle position—considerably above the South's income but below that in the Northeast and West.

Western farm dwellers saw their relative position slip during 1960-69, though income remained high relative to the other regions. The Northeast, meanwhile, moved into first place among the Census regions.

Regional differences in income were less pronounced for the nonfarm residents. The South again had the lowest median income, but the level was 82 percent as great as in the highest income region, which embraces the Western States. (11)

## High-Income Farms House Growing Population

Though the farm population declined by 1.7 million persons during 1966-70, farms with gross sales over \$20,000 netted a population increase.

Dwellings on Class I farms (sales of \$40,000 and up) and Class II (\$20,000 to \$39,999) housed 400,000 more residents in 1970 than 4 years earlier. The combined population on farms in these sales categories made up 25 percent of the entire farm population—up from 17 percent in 1966.

The advance reflects an increase in the number of farms that produce large volumes or handle products of high value. Some of this increase in 1966-70 was due to a genuine expansion in the number of large-scale farms. But inflation of prices also contributed, as did the growth of specialized operations such as feedlots, where the products carry a high value.

In 1970, the population on Class I and II farms lived chiefly in the North and West. However, a larger proportion of the Class II farms (80 percent) were located outside the South than the Class I farms (67 percent). Unlike the North and West, where farms in both sales classes added residents during 1966-70, the South experienced a slight decline in Class II population.

There was no significant difference in the proportion of blacks and whites who resided on farms with sales over \$20,000—nearly a fourth of each racial group in 1970. But the comparison falls short when a distinction is made between farm operator households and other types of farm dwelling units. More than 20 percent of all white farm operators lived on Class I and II farms, compared with only 3 percent of all Negro operators.

A large concentration of non-operators lived on the high-income farms, regardless of race. The majority of them are hired farm worker families, and thus found on the larger farms. (13)

FAMILY INCOMES: HOW THEY'RE DISTRIBUTED

Year	Family earnings <sup>1</sup>					Average income	Median income	Annual growth in median income (1960-69)
	Less than \$5,000	\$5,000-\$6,999	\$7,000-\$9,999	\$10,000-\$14,999	\$15,000 or more			
Percent								
1960	72	13	9	4	1	3,780	3,010	
1969	46	17	17	13	7	7,920	5,430	7
Farm families								
1960	37	23	22	13	5	6,650	6,110	
1969	24	16	23	22	15	10,979	8,140	3
Nonfarm families								
1960	59	17	13	7	4	5,360	4,250	
1969	33	17	21	19	10	9,690	7,080	6
Farm family incomes by regions								
Northeast								
1960	59	17	13	7	4	5,360	4,250	
1969	33	17	21	19	10	9,690	7,080	6
North Central								
1960	73	12	11	3	1	3,820	3,250	
1969	41	17	19	15	8	8,540	6,010	7
South								
1960	81	10	6	3	2	2,990	2,190	
1969	57	15	14	9	5	6,530	4,240	8
West								
1960	45	23	15	14	3	5,850	5,450	
1969	35	17	16	17	15	9,490	6,810	3

<sup>1</sup> From all sources. <sup>2</sup> Less than 1 percent. Totals may not add to 100 due to rounding.  
SOURCE: U.S. Dept. of Commerce.



## Men and Milestones

Washington, January 1927—W. J. Spillman's short book, *Balance ing the Farm Output, comes off the press.*

Spillman's slender volume carried a curiously Victorian-sounding subtitle: "A Statement of the Present Deplorable Conditions of Farming, Its Causes, and Suggested Remedies." Yet there was nothing old fashioned about the author's arguments which amounted to the first formulation of what was later called the domestic allotment plan, a cornerstone of American agricultural policy.

Walter J. Spillman traveled a long road from the Missouri farm where he was born on October 3, 1863 to the U.S. Department of Agriculture where he wrote his book.

Educated at the University of Missouri, he taught in his home State and later in Indiana, Oregon and Washington. As a professor of agriculture at Washington State College he worked on the de-

velopment of new winter wheat varieties and in the process made major contributions to the science of genetics.

In 1902, he joined USDA, first as a grass and forage specialist and then, in 1905, as head of the new Office of Farm Management. Concerned with carrying his management ideas directly to farmers, he set up a system of county agents in the North and West parallel to the network that Seaman A. Knapp developed in the South.

Spillman left the Department in 1918 to become associate editor of the *Farm Journal*. But he returned 3 years later and began his investigations into the economic problems of farmers.

The result was his 1927 book in which he urged farmers to reduce output in order to achieve economic comparability with other industries. His ideas, modified and publicized by John D. Black and M. L. Wilson, provided much of the philosophy behind the first Agricultural Adjustment act. (14)

## Tobacco Firms Put Billions in Economy

Tobacco manufacturing adds billions to the national economy and provides tens of thousands of jobs.

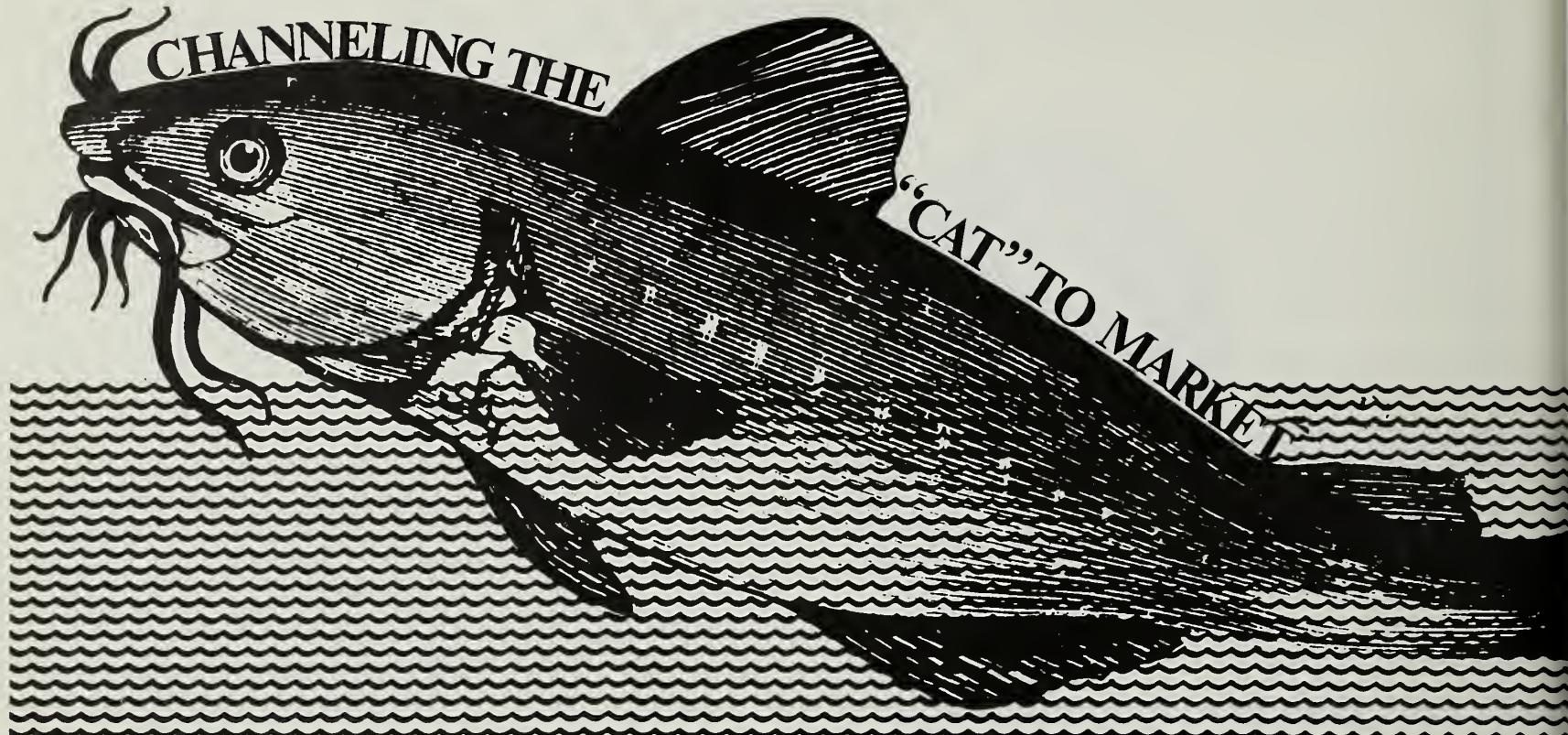
The manufacturing process begins with the removal of tough stems and veins from tobacco leaves, which are then redried and stored. In 1967 (latest available data) there were 119 stemming and redrying plants. They paid \$66 million in salaries to 16,000 workers.

After a storing and aging period, manufacturers process tobacco into consumer products. The 210 firms making chewing and smoking tobacco and cigars and cigarettes employed nearly 60,000 workers in 1967 at an annual payroll of \$277 million. The value added was about \$1.9 billion, with the 16 cigarette companies contributing over four-fifths of the total. Virtually all cigarette manufacturing takes place in North Carolina, Virginia, and Kentucky.

Nationally, the South Atlantic and South Central regions account for most of the value added—more than nine-tenths in 1967. The combined payroll of the more than 180 tobacco manufacturers in these regions came to \$324 million, representing 2 percent of all manufacturing wages.

Makers of tobacco products depend on numerous other industries for materials, containers, supplies, fuel and electric energy. In 1967, tobacco plants bought nearly \$400-million worth of these items. An additional \$35 million consisted of plant and equipment expenditures.

Advertising is another major expenditure of the tobacco industry. In 1970, around 3¢ of each dollar consumers spent on cigarettes went for advertising and promotion, or \$314 million. Sixty-five percent went for TV advertising, followed by newspapers and magazines, and direct promotion. However, since early 1971 and the radio/TV ad ban, spending on advertising has declined about a third, and magazines replaced TV as the leading media. (15)



*It's not an easy matter getting farm-fed catfish from pond to consumer efficiently. The 5-year-old processing industry has run into some snags, ERS reports.*

The catfish farming industry has all the excitement that a new industry commands—and all the problems.

Particularly well suited to the South because of climate and resources, catfish farms produced more than 34 million pounds of catfish in 1970—twice as much as in 1969. Processed catfish production tripled from 1970 to 1971.

However, the industry's barely 10 years old, and there's a great deal of research to be done—from fish-rearing to consumer preferences.

One of the major challenges to the industry now is in catfish processing. With production increasing rapidly, costs and problems in processing have become critical at this stage of the industry's growth.

ERS delved into the subject with interviews of all known processors in a 9-State area where most of the catfish are raised. Arkansas and Mississippi are the main producers.

Until 1967 there were no catfish

processing plants in the South. Producers sold their fish primarily to live haulers. At the time of the study, 1970, there were 16 processors, with 10 having started in 1969. Expanded production—due to high initial returns to farmers—had created a need for processors who could meet requirements of the food market.

ERS found that:

- Existing plants could process three times the volume they were able to obtain;

- Processors had a great deal of doubt as to the best marketing practice and were still experimenting;

- More research is needed on potential demand in other areas of the country;

- Processors needed a more constant supply of fish so they could operate 12 months a year.

All of the processors expected an increase in catfish production in their area, and felt that the industry's potential was good.

However, a majority of the processors said the present margin between prices paid and received barely covered costs—there was little profit, if any. Others said they were losing money each month.

Part of the problem is that none of the processors was able to obtain enough fish to operate near capacity. This is especially true during the summer months when few producers sell their fish because of the high death rate from harvesting in hot weather. Over half the processors reported the summer shortage was one of their most serious problems. Several plants had to close down for 3 months or more during the summer, and only half of the plants were able to operate with some volume for the entire year. Overall, the plants operated at 29 percent capacity, with the largest plants averaging 39 percent of capacity.

In expanding their sales, processors said they could sell more fish if they could lower their selling price. To do this, they felt research was needed for greater efficiencies in both production and processing of catfish.

In processing, for example, they felt additional research for better skinning and dressing equipment would help cut costs.

At the time of the study, seven of the plants used machines for dressing. Their employees dressed an average of 570 pounds of fish on a live

distributors who deliver to wholesale outlets, while others attempted to deliver their product to the wholesalers themselves. Nearly half of the firms' total sales were to distributors or brokers.

None of the firms had contracts with a restaurant or other outlet for the complete marketing of their catfish. Though many processors would have liked such an agreement, they said they could not depend on a steady supply of fish from producers to meet requirements of purchasers. Some had entered into contracts, and had lost them when they couldn't meet delivery requirements.

Drawing a profile of the plants, ERS found that five were owned by individuals, five by corporations, five were cooperatives, and one was formed as a partnership. Total investment—land, buildings, and equipment—ranged from \$12,000 to as much as \$1 million. (16)

weight basis per man per shift. Six of the processors used hand labor only. Their employees averaged 437 pounds per man per shift, while two plants using both hand labor and machines averaged 467 pounds.

The processor comes into the picture usually when the fish weigh about 1 to 1½ pounds and are ready to be harvested. He usually furnishes a tank truck to transport the fish live back to the plant. Harvesting is frequently done by draining the pond or seining the fish.

In 1970, the 16 processors bought 6.4 million pounds of catfish—mostly channel cat—on a live weight basis from farmers, paying an average of 35¢ a pound. The fish dress down to 55–60 percent of their live weight.

Of the 3.7 million pounds of catfish the processors sold in 1970, the average price was 86¢ a pound. Just about all the sales were wholesale, and about evenly divided between fresh and frozen. Fresh fish averaged 90¢ a pound and frozen, 81¢.

Marketing the dressed fish was still in an experimental stage at the time of the study. Processors tried various types of packages, and marketed various sizes of catfish. Some reported best results selling through

### *Domesticating the Cat*

Catfish are frontswimmers in aquaculture for a variety of reasons, including their tastiness, adaptability to commercial farming, and efficient feed conversion ratio. (It takes about two pounds of feed to make a pound of catfish—putting them far ahead of livestock in feed conversion rates.)

Farmers can raise the fish from brood stock or buy fingerlings. While most of the fish are raised in open ponds, raceways and cages are also being used. Catfish are suited to ponds with water temperatures above 70 degrees at least 4 months a year. They're fed six times a week in summer, with feed slackening off during cold weather. They reach edible size in about 18 months.

There's a market for the fingerlings for stocking other farms; for game-sized fish for sports fishermen in "fee ponds;" for both live and dressed fish for retail and wholesale outlets.

Among the problems producers face are oxygen deficiencies in the water; "trash" fish that get in the pond and compete for feed; disease and parasites; and off-flavors that make catfish unmarketable. (17)

## Roots of Flower Industry Are in Mass Production

It's taking fewer growers to produce more flowers these days.

The change stems from modern technology that's made it possible for flower growers to greatly automate production.

In a field where mass production was once believed difficult, more than four-fifths of the sales of the major cut flowers—carnations, chrysanthemums, gladioli, and roses—come from growers with sales exceeding \$15,000.

These producers are relatively few. Only 14 percent of the pompon chrysanthemum producers had sales over \$15,000 in 1970 . . . but they accounted for 83 percent of the sales volume. Only a fourth of the gladioli producers had sales over \$15,000, but they accounted for 97 percent of the sales volume.

The general trend has been toward fewer producers of major flowers. The exceptions have been roses and potted chrysanthemums.

Another trend has been toward specialization and concentration of cut flower production in California, Colorado, and Florida. California increased its flower production by \$22 million from 1966–70 . . . accompanied by decreasing numbers of producers.

While the floral industry was adjusting its marketing structure to the shifts in domestic production, foreign production in 1970 entered the scene in an important way for the first time.

Cut flower imports totaled \$4.5 million worth, up from \$1.4 million in 1967. Italy, the Netherlands, and Canada accounted for a large share, but the biggest increase came from imports of flowers from South American countries, primarily Brazil, Ecuador, and Colombia.

Although it's too early to know the full impact of foreign production on domestic producers, the evidence is clear that imported high quality flowers can be marketed in the U.S. at competitive prices. (18)

## Maine Potato Growers At Marketing Crossroads

They're No. 2, but can they stay there? That's a question Maine's potato growers are asking as they eye the stiffening competition from the other major potato States (Idaho, Wash., Calif., N.D., N.Y., Minn., and Oregon).

Right now most Maine growers elect to meet the competition by withholding the bulk of their stocks from the market until after the peak of the fall harvest season. In the 1960's this technique worked for most growers 7 years in 10: by March, prices had risen enough to cover added storage costs and then some.

Lately, however, the margin of gain has been narrowing. This past February, for example, the price to Maine's growers averaged only 15¢ higher than in November following the fall harvest. During 1960-70, the difference was nearly 50¢.

The experience of producers in other potato regions suggests Maine growers will be making some changes in their marketing strategy. They could do this in several ways.

*Greater emphasis on processing.* Production areas far from markets now are the major processors, inasmuch as processing greatly cuts down on freight costs. For this reason, the industry in the Pacific Northwest—making dehydrated and frozen products—is growing rapidly. Maine could do more branching out into processing, and gain a competitive edge by virtue of its closeness to the principal eastern markets. (ERS estimates that a 5-percent annual increase in potatoes used for freezing would mean that a total of 96 million cwt. of the 1980 crop would move to freezers. This is only one-fourth less than today's marketings of table potatoes. It is also a good probability that by 1980 freezing will require about as many potatoes as will be used for table stock.)

*Fewer marketing organizations.* Maine's Department of Agriculture reports that of 1,200 growers in

Aroostook County, as many as 750 pack potatoes under inspection, and there are 116 licensed dealers. Fewer and larger marketing organizations, nationwide trends indicate, would enable Maine's marketing agencies to give their customers more service, more volume, and at lower cost.

*Meeting needs of institutional buyers.* In 1969, they used over 13 million cwt. of table potatoes plus nearly 24 million cwt. of raw potatoes made into frozen french fries. This was roughly the equivalent of Maine's entire production of fresh potatoes that year. Some marketing agencies in Maine are moving to meet the requirements of institutional outlets. This helps Maine growers better meet the competition of other regions. (19)

## Cotton: Ways To Save On Handling Charges

A lot of moneysaving shortcuts have been taken in getting cotton from farm to textile mill. It's also true that many of these gains in marketing efficiency have been offset by rising wage rates and other input charges.

Looking for further ways to reduce costs, a team of economists rated the efficiency of several marketing services and found room for improvement. The study, based on conditions in Arizona and California, concluded that as much as a third could be shaved from the total cost of these four services: seed cotton assembly, gin processing, transporting baled lint from gin to warehouse, and warehouse receiving.

To achieve the cost savings would require relocating cotton gins and warehouses, and eliminating the duplication of certain services. Also needed—the adoption of the latest ginning technology for greater economies of size.

Two theoretical models were used to estimate the possible cost reductions. In model I, a 1,000-square mile production area was divided into four equal squares, each with a gin plant at the center, and with one

warehouse in the middle of the entire area. Each gin had an hourly capacity of 36 bales per hour, compared with conventional gins with 12-bale capacities. Distance from gins to warehouse was about 12 miles.

In model II, instead of four separate gin plants there were four 36-bale per hour gin processing lines placed adjacent to the warehouse.

In the final analysis, model I saved \$6.95 per bale over the \$25.40-per-bale cost of the four marketing services as they're conventionally provided. Model II saved \$8.55 per bale.

Reduced handling cost was a big factor in improved efficiency. Most bales ginned in California and Arizona are handled five times before being stored in warehouses.

At the gin platform, bales are manually loaded onto a small trailer, hauled to the gin bale yard, and unloaded for temporary storage. Later they are reloaded onto a flatbed motor transport and taken to the warehouse, unloaded again, and placed in row blocks. Finally, they are moved to storage compartments and stacked.

Four of these handlings can be done away with by locating the warehouse closer to the gin facilities; and by having only the gin plants perform the tagging, weighing, recording, and sampling operations. These are now done twice—at the gin plants and again at the warehouses.

The cost savings also assume that the gins install the newly developed automatic presses, which may eventually eliminate the need for warehouse compression.

The economists who made this analysis note that model II is a complete departure from conventional ginning-warehouse relationships. Model I, on the other hand, proposes nothing revolutionary other than the inclusion of higher capacity gin plants with automatic gin presses, some consolidation and relocation of facilities, and elimination of duplicate services. For this reason, Model I may be the more acceptable one for most cotton dealers. (20)

The prospect of a complete ban on saccharin has added fuel to the search for new noncaloric sweeteners. Among possible contenders to step in for saccharin are a couple of tropical plants.

When cyclamates were banned in 1969, there was saccharin to fall back on. But after saccharin?

Advised that some saccharin-fed rats developed tumors after a 2-year experiment, the Food and Drug Administration in late 1971 dropped saccharin from its GRAS list—a roster of food additives “Generally Recognized as Safe.”

The FDA may be required under a section of Federal Food and Drug laws known as the Delaney amendment, to totally ban the use of saccharin as a food additive if a tie-up with cancer is found.

The Delaney amendment prohibits the use of any substance that's known to cause cancer in humans or animals, regardless of how long the substance is used, or in what quantities. The same amendment spurred the FDA to ban cyclamates, which were linked to cancerous tumors in rats.

More tests must be run on saccharin, and further action by the FDA isn't expected until at least July. The FDA presently limits the amount of saccharin that can be added to foods and low-calorie soft drinks, in an attempt to “freeze” saccharin use at current levels.

Since saccharin is the only remaining artificial sweetener, the prospect of a ban has intensified the long-running quest for new non-caloric sweeteners.

The search has led scientists to screen tropical plants for intense sweetness. One plant, dubbed the “miracle fruit,” has yielded a substance known as a glycoprotein—a protein with sugar groups attached. This substance has remarkable taste-modifying properties. Though it has little flavor by itself, the miracle fruit tends to sweeten anything eaten with it.

The sweetening powers of the mir-



acle fruit, a small red berry native to West Africa, have been studied for several years at U.S. research centers, including Brown University, Florida State University, and the Army laboratories in Natick, Mass.

A private company in Massachusetts has developed an extract of the miracle fruit, on which toxicity tests are currently being run. The firm is gearing up to market the sweetener, and has already grown 100,000 mira-

cle fruit bushes in its greenhouses. By the mid-seventies, the company expects to have a million of the 4½-foot shrubs bearing fruit in Massachusetts, Puerto Rico, Brazil, Venezuela and Panama.

The miracle fruit has one drawback that may limit its usefulness—its sweetening powers produce a lingering aftertaste.

The serendipity berry, also a native of West Africa, may come closer to filling the needs of the diet-food industry. Called simply the "wild red berry" by some, the serendipity berry is found in dense forests, where it grows in clusters on climbing vines.

Unlike the miracle fruit, the serendipity berry has an intense sweet taste of its own. Scientists have isolated a natural low-calorie sweetener from the serendipity that's said to be 3,000 times sweeter than sugar. The isolated substance—a white powder—was found to be a protein.

That a protein alone can impart sweetness is a totally new concept, and little is known about its effect on metabolism or other body functions. Years of testing lie ahead for the serendipity berry, which will come under close scrutiny before it ever stands in for saccharin on the commercial market.

The two West African berries may someday vie for markets with a host of other noncaloric sweeteners currently being tested and studied. Dihydrochalcones and aspartame are a couple of leading contenders.

Dihydrochalcones, commonly referred to as "dihy's" or chalcones, were discovered by USDA's Agricultural Research Service. Derived from citrus wastes, one member of the chalcone group is 2,000 times sweeter than sugar.

In their present form, however, the chalcones are relatively insoluble in cold water and tend to leave an aftertaste—properties that render them suitable only for nonfood uses, such as mouthwashes and toothpastes. Chalcones are still being tested, and approval by the FDA is at least 2 years away.

Aspartame—short for aspartyl-phenylalanine methyl ester—also has its drawbacks. The substance is somewhat unstable in water solutions—it sometimes loses its sweetening power during storage or hot processing.

Aspartame's developer, a private pharmaceutical company, will finish testing the product in about a year. At that time, the firm plans to petition the FDA for approval to market the sweetener.

The extremely expensive testing required for FDA approval has impeded the development of new noncaloric sweeteners. Probably no substitute would be immediately available if saccharin were banned. But given the pace of current research, the situation could change over the next several years. (21)

## From Out of the West Come Instant Frijoles

Much of the drudgery of preparing some dried bean dishes may go out the window now that instant bean powders have been developed.

By eliminating the soaking and cooking period for dried beans, the use of instant bean powders could reduce labor and storage costs for restaurants and institutions, as well as for manufacturers of Mexican-style foods.

The developer of instant bean powders—USDA's Western Regional Research Laboratory—reports the powders retain both the flavor and nutritional qualities of the original beans. Powders reconstitute easily with water to make soups, party dips, and refried beans and can also be used in meat loaves, bean pies and other dishes.

A market study to determine the potential users of powders from pinto beans found there's a sizable market—food service outlets in particular. Of 49 establishments surveyed, 25 said they were either "very interested" or "possibly interested." In all, these establishments alone could use from 3 to 7 million pounds a year.

The greatest interest appeared to be as a convenience item in making dips, refried beans, topping for Mexican-style pizzas, and other Mexican dishes.

The cost to make bean powder on a commercial scale—including raw product, packaging, and transportation—was estimated at 17¢ per pound (assumes a cost of 7¢ per pound for beans).

Although some organizations indicated an interest in bean powder at prices in excess of 20¢ per pound, a reduction in cost to a point where pinto bean powder could sell for 15¢ per pound is probably essential to develop a large restaurant and institutional market for this product. The use of lower grade beans could reduce the total cost of the powder.

Major reasons given by the establishments not interested in the powders were that they were too expensive, had a bland flavor, would be hard to distribute nationally, the end product was smoother than preferred, or the color was not right.

USDA researchers say, however, that production of the powder could be adjusted to suit the user's desire for variety, color, and taste. (22)

## Low-Fat Diet Would Topple Traditional Menu

Consumers would eat more but get fewer calories if they adopted a diet recommended by the American Heart Association.

The American Heart Association (AHA) maintains that the danger of heart trouble could be greatly minimized if consumers would lower their intake of cholesterol and substitute some polyunsaturated vegetable oils for saturated fats.

Consumers are advised to use moderate portions of lean meat, fish and poultry, and avoid fat cuts of meat and processed items such as frankfurters, sausage and salami that are high in saturated fat.

The AHA prescribes use of low-fat and fat-modified dairy goods and bakery products. Salad and cooking oils, new soft margarines, and short-

ening low in saturated fat would replace butter, margarine, and regular shortening. Also to be avoided are bacon, lard and suet, while fruits, vegetables, grains, and legumes are highly recommended.

Not all members of the medical profession agree with the American Heart Association. But if consumers followed all the recommendations of the AHA, average diets would contain 13 percent fewer calories than reported in a 1965-66 household consumption survey. Actual pounds of food eaten, however, would increase 15 percent, as larger quantities of low calorie foods are needed to replace part of the calories lost because of the smaller intake of high energy foods.

We'd also be eating about 10 percent more beef, veal and lamb, but around 70 percent less pork . . . 50 percent more poultry and fish . . . 75 percent less eggs, margarine, and shortening . . . 60 percent more cooking oil . . . and 75 percent more fruits and vegetables.

Except for butter, there would be almost no change in total use of dairy products, and total consumption of fish, poultry and meat would not vary significantly.

Sweeping changes in diets aren't likely to happen overnight, however.

Cost is a main deterrent. The AHA's proposed diet would cost 9 percent more than the average 1965-66 household diet in 1957-59 prices. Substantial increases in fruit and vegetable consumption would be largely responsible. Also, larger amounts of beef, poultry, and fish are generally higher priced than the foods they'd replace—pork, eggs, fats and sugars.

Another obstacle lies in people's reluctance to change traditional eating patterns. In recent years, however, there's been a trend toward some lower-fat items in U.S. diets. Some of this may reflect a conscious effort to cut calories. Other changes appear economically motivated.

For example, a gradual shift from whole milk to low-fat milk consumption seems to be diet related, as both

products are similar in price. Conversely, margarine's incursions into traditional butter markets largely reflect economic considerations, since both spreads are identical in calorie content.

The trend toward smaller breakfasts may account for some of the decline in bacon and egg consumption in recent years. But diet concerns may have been a factor. Expanded chicken and beef use may be tied to changes in prices and incomes. However, it's also possible that some of these shifts mirror a desire for less animal fats and cholesterol in the diet.

The food industry could promote additional changes with the development of more fat modified products. Besides low-fat milk and frozen dairy products, the industry might provide frankfurters, luncheon meats, and bakery products that are lower in saturated fats.

Improved feeding and breeding practices might yield beef, pork, and other meats with a lower or modified fat content. In the dairy industry, some current research focuses on breeding cows that will give milk with lower butterfat or modified fat. And a few manufacturers are marketing a dried egg product that uses regular egg whites but substitutes modified yolks. (24)

## Shoppers Tag Bargains As Unit Pricing Spreads

There are a lot of things that have happened—and a lot that haven't—since unit pricing tags popped up on a lot of supermarket shelves over 2 years ago.

One is that many customers have switched to different sizes of their favorite brand. Some discovered that the largest size was really the cheapest on a cost-per-pound basis. Some discovered it wasn't . . . and that they'd been lugger home the heaviest items on the shelf with nothing more to show for it than more muscle.

But the predictions that shoppers

would switch to the store's private brands when savings became apparent haven't come true.

Though unit pricing's main purpose is to help shoppers find the best buy, shoppers also consider their own preferences and family needs. And some aren't able to take advantage of "best buys" because the total cost is higher and won't fit into a limited budget.

More than 100 food chains have put unit pricing systems into effect over the past few years, so that in most principal cities today, unit pricing is available to the shopper who wants it.

The stores with unit pricing are usually large, multi-store operations that can use a computer to do the work. Without access to a computer, time, labor, and equipment costs would be prohibitive. Cost estimates for unit pricing have ranged from "very little" to more than \$2,000 a year per store. In some cases, costs have been offset somewhat by savings from better inventory control.

While the shopper who uses unit pricing is still in the minority, studies indicate that the number of users is increasing. So far, it appears that those at higher education and income levels are the ones more likely to be using unit pricing information.

The task ahead, according to an ERS consumer research specialist, is to help shoppers understand how to use unit pricing and to perhaps come up with a better shelf tag system. Price comparisons can be made easier for the shopper by the way products are grouped on the shelf. And bright, boldly printed tags would be easier to read than computer-printed labels now used.

However, one spokesman for a company that's tried different tags explained that time, rather than cost, was a big problem with more readable tags. New tags and price changes were rapidly available through the company's computer, but substantial delays were encountered when an outside firm was relied on to receive price information, print the tags, and return them to the chain. (25)

*Trade talks between the EC and the remaining countries of EFTA could end in agricultural concessions, and in million-dollar losses for U.S. farm exporters.*

New trade agreements being worked out between certain European countries do not bode well for exports of U.S. farm products, a recent ERS study says.

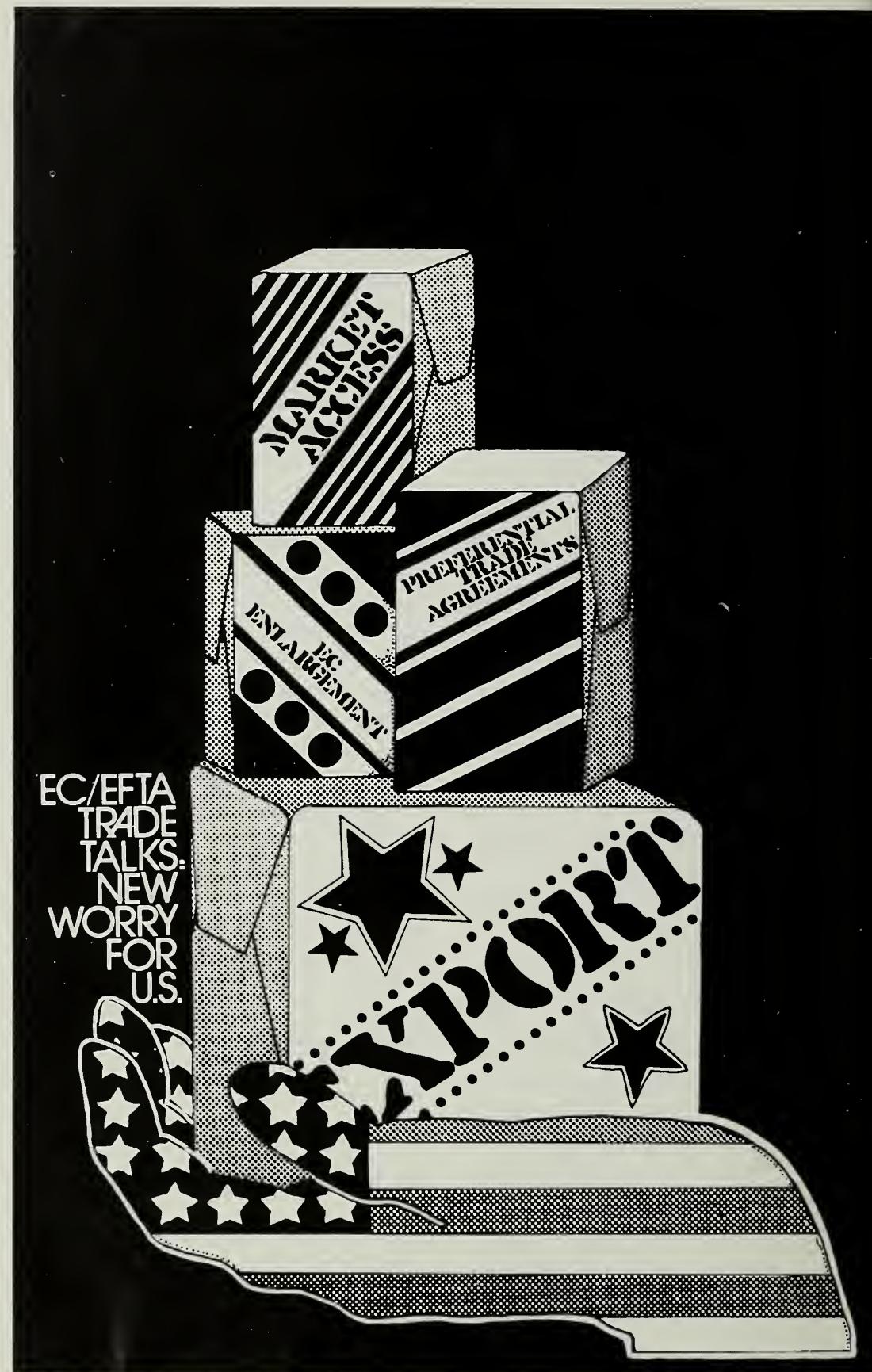
One of the parties to these agreements is the European Community (EC). The others are the countries that will remain in the European Free Trade Association (EFTA) after three EFTA members leave the bloc to join the European Community.

The trade arrangements will involve some form of an industrial free trade area for all the EFTA countries within the EC. A comparable area will not be set up for agriculture. However, both the EC and the remaining countries of EFTA are interested in specific agricultural concessions to facilitate trade.

Depending on the outcome of negotiations now under way, such concessions could lead to greater imports by the remaining EFTA countries of the EC's farm products. The upshot would be to liven the EC competition for the import business of the remaining EFTA countries, in which U.S. agriculture has a large stake.

The stage for the current trade talks was set many years ago when three EFTA members—the United Kingdom, Norway, and Denmark—first applied for membership in the EC. However, significant progress in negotiations did not come until the round that began in mid-1970 and concluded with accession treaties signed in January 1972. The three countries are expected to officially join the EC in January 1973. In the interim they will be passing the legislation needed to harmonize their old laws with the EC's.

Indications are the new members of the EC will formally leave the ranks of EFTA at the end of this year. The trade of the remaining



EFTA countries could be jeopardized if they fail to make special arrangements to do business with their former partners in EFTA.

The countries still in EFTA in 1973 will be Austria, Portugal, Sweden, Switzerland, Finland, and Iceland. They sometimes call themselves the "neutrals," because—except for

Portugal—their decision not to join the EC was primarily based on a desire to maintain political neutrality.

The neutrals in 1968–70 looked to the U.K., Denmark, and Norway as markets for nearly a fifth of their agricultural exports to all countries. The value of exports to the three EC applicants averaged \$145 million an-

nually in the 1968-70 period.

It's possible the enlarged EC will mean a voiding of the preferential treatment now granted by the EC applicants and others in EFTA (including some agricultural products). Too, the EC tariffs and variable levies would replace the national tariffs and trade restrictions of the applicants. In the agricultural sector, this would generally lead to a higher level of protection than is now the case.

For its part, the EC sees advantages in granting certain special arrangements the neutrals are asking for. The establishment of an industrial free trade area would avoid the rebuilding of tariff walls between the neutrals and new EC members. It would also eliminate most tariffs between the neutrals and the original six EC members. Limited agricultural concessions might help ease the EC's marketing problems without reducing their freedom of action in the sphere of agricultural policy.

The arrangements, on the other hand, would not be all to the good of third-country suppliers.

In November 1971, a month before the EC-EFTA negotiations started, the U.S. Government made a strong presentation to the EC expressing concern over the discriminatory aspects of the EC plan. The U.S. spokesmen stressed an intention to vigorously defend U.S. trade interests.

From the U.S., the neutrals imported an average of \$193 million during 1968-70 in agricultural products. Sweden and Switzerland together accounted for roughly a third.

The main imports from the U.S. were fruits and vegetables (\$46 million), grains (\$35 million), tobacco (\$53 million), and animal feed (\$16 million). Others included hides and skins, oilseeds and fats and oils, meats and preparations, and cotton.

The agricultural concessions requested by the European Community are likely to involve products that are or have been in surplus in the EC, such as wheat, dairy products, certain fruits and vegetables, poultry

meat, and eggs.

To some extent nearly all our exports of fruit and vegetable products compete with EC exports in EFTA. The major items are citrus, apples and pears, and canned fruits.

Imports of U.S. grains by the neutrals have been declining in recent years, and preferential arrangements would hasten this trend. Such arrangements would doubtless be attractive to the EC, where grains are in surplus and will probably continue to be in the foreseeable future.

The EC competes with U.S. exports of wheat, corn, and rice to the remaining EFTA countries.

In the meat group, poultry would be particularly vulnerable to a preferential agreement. The EC in recent years has produced a surplus of poultry, and is searching for markets.

U.S. trade interests could also be affected if the EC grants reciprocal concessions on farm products to the EFTA neutrals. These, however, would probably be limited to certain processed food products not covered by the EC's Common Agricultural Policy. In 1968-70, the U.S. sold the neutrals about \$4.5 million of such processed items. (26)

## Stiff Levies Slow U.S. Farm Sales to EC

For U.S. farm exporters, the 10th anniversary of the European Community's Common Agricultural Policy (CAP) is hardly cause for celebration. Sales of U.S. agricultural commodities to the Community over the past decade expanded at less than two-thirds the growth rate of our commercial sales to other countries.

The sluggish performance in the European Community (EC) has to do with the CAP and its system of variable levies that keep imports priced higher than goods produced within the Community.

Of our \$1.8 billion farm sales to the EC in 1971, \$448 million were of

*(Please turn page)*

## What's EFTA?

The European Free Trade Association (EFTA) was born on July 1, 1960—exactly 1½ years after the Common Market, better known today as the European Community.

Had it not been for the Common Market, there might not be an EFTA.

EFTA was conceived out of a desire to protect the trading interests of the countries of Western Europe that had not joined the Common Market. The Market was working toward common external tariffs to insure greater trade with the member countries, and less with outsiders. So the non-members decided to form an industrial free trade area of their own.

The original signers to EFTA were the United Kingdom, Norway, Denmark, Austria, Switzerland, Sweden, and Portugal. Finland became an associate member in 1961, and Iceland joined in 1970.

Like the Common Market, EFTA aimed to gradually reduce tariffs within the area and to completely dismantle them by January 1970. By 1967, 3 years ahead of schedule, virtually all industrial tariffs had been eliminated, except in Portugal. However, EFTA has sought only to break down the trade barriers between EFTA members. Tariffs facing outsiders are not affected.

Unlike the Common Market, EFTA's goals are solely economic. The Common Market's goals are all-encompassing, seeking not only economic integration but, ultimately, political unity.

Too, there is no common agricultural policy as exists in the Common Market. EFTA members retain their individual policies in agriculture. As such the elimination of trade restrictions has necessarily applied almost entirely to industrial products.

EFTA has, however, fostered internal trade in agricultural products through such measures as classification of certain agricultural products as industrial for the purpose of tariff reductions, and the promotion of bilateral agreements with provisions for agricultural trade. (26)

items subject to variable levies. Products in this group include feed grains, rice, wheat and wheat flour, beef, pork, veal, dairy products, poultry, eggs, and sugar.

U.S. exports of variable-levy items gained about a fourth from the 1959-61 pre-levy average, mostly due to higher feed grain exports. Wheat and poultry exports fell sharply.

But the value of exports *not* subject to variable levies gained 94 percent to \$1.4 billion in 1971. Growth leaders included oilseeds, primarily soybeans, and tobacco.

Despite bigger total sales, the U.S. share of the EC market skidded from 14 percent in 1961 to roughly 11 percent in 1970. The market share of other third country suppliers dropped from 60 to 48 percent, as CAP protective levies held imports in check. Even the share cornered by the four EC applicants—the U.K., Denmark, Norway, and Ireland—fell slightly.

Meantime, EC "intratrade" more than doubled. The Community's portion of its own agricultural import market rose from 20 percent in 1961 to 36 percent in 1970.

In a decade under the CAP, the U.S. and other agricultural exporters have become residual suppliers. The squeeze on our farm exports will tighten even more if the CAP is extended over the four nations that have applied for EC membership.

The recent devaluation of the dollar was expected to make U.S. commodities more competitive on the EC market. The EC, however, thwarted this hope by imposing compensatory levies, also called farm border taxes, on variable-levy imports from the U.S.

As ERS economists see it, a few measures may enhance access to the protected EC market. One is close adherence to GATT (General Agreement on Tariffs and Trade) regulations to prevent trade practices that may prove unfavorable to the U.S.

Also recommended are modifications of the highly protective variable levies, and reductions in the fixed tariffs on non-levy commodities. (27)

## U.S. Sells Japan "Liberated" Lemons

How do you persuade a customer to try your product and keep coming back—especially when you're selling a lemon?

That was the challenge facing the California-Arizona Citrus League when it first went to Japan to promote U.S. lemon sales in a big way.

The year was 1964. The Japanese had just lifted the import restrictions on lemons. Before then, the small shipments going to Japan went under quota, and most were bought by institutional users.

The Citrus League, with help from USDA, seized the opportunity to develop new business. These salesmen looked before they leaped into the

### Wheat Leaders

If you had to pick the 10 leading wheat producing nations for 1971, would you include Mainland China and India? These two ranked third and fourth, respectively, after the USSR and the U.S.

Others in order were France, Canada, Turkey, Italy, Australia, and West Germany.

If this list seems surprising, it may be you were misled by the traditional images of countries and their positions as wheat exporters (or importers) in the world grain economy.

Australia, for example, has a vast wheat area. It's also one of the world's chief wheat exporters, yet it placed only ninth in 1971 as a wheat producer. Domestic demand provides a clue to this anomaly. By comparison to its production, Australia's domestic needs for wheat are small, and thus it turns to foreign demand for a marketing outlet.

Mainland China and India are thought of as rice consumers, as well as major wheat importers. But they're by far the world's most populous nations. Even their large wheat output cannot meet the heavy domestic demand for food supplies, and they've needed to import wheat to relieve the pressure. (29)

market, a Citrus League official told participants in the 50th National Agricultural Outlook Conference.

Before launching the promotion campaign, the League first needed to find out more about the market to be tapped. As it turned out, the conditions proved rather unique. A study to determine who used lemons found that 8 in 10 Japanese had never tasted a lemon, and a substantial number had never even seen one.

Thus it was decided to make consumer education the goal of promotion for the first several years. Lemons were publicized through TV and magazine ads, demonstration and sampling programs in supermarkets and department stores.

The messages were quite simple. For example, how to cut lemon wedges; add a little lemon juice in black tea to improve the flavor; lemons can be squeezed over fish, meats, and salads; and how to make lemonade.

By 1968—4 years after the Japanese lemon market opened up—exports by California-Arizona had swelled from 250,000 cartons a year to 2 million. Most, however, went to the big cities. So in 1969, the Citrus League began promoting sales in the smaller population centers. As a result, California-Arizona's lemon exports reached a record 3.4 million cartons in 1971, for a value of around \$11 million. In fact, Japan's per capita lemon consumption in Tokyo and Osaka was higher than in the U.S. Based on sales gains in the secondary cities, the League figures business will grow to 5 million cartons by 1975.

Mid-1971 presented another challenge: the Japanese Government liberalized imports of grapefruit. Learning from experience, the League's promotion emphasizes the fundamentals, such as how to slice a grapefruit in half (through the equator, not the poles) and how to cut the fruit from the peel. Before liberalization, sales at best were 65,000 cartons a year. The League foresees over a million cartons in the year that lies ahead. (28)

## Soybeans Under Full Sail As Top U.S. Farm Export

Soybeans are expected to account for well over a fourth of all U.S. agricultural exports for 1971/72, exceeding last year's record export value of \$1.9 billion. Volume may be off slightly, but higher prices should boost value above fiscal 1971's.

Last year, nearly 95 percent of the exports were commercial sales for dollars. The remainder moved under Government-financed programs. Of this, almost all was soybean oil, going to some 68 countries.

The U.S. is by far the world's

leading exporter of soybeans and soybean products, supplying 90 percent of global shipments in 1970/71.

The growth of the U.S. as world supplier—in 1934–38, it supplied only 2 percent of world soybean exports—is credited to increases in U.S. production, strong foreign demand, and aggressive market development.

The top 10 markets for U.S. soybeans bought 90 percent of our total exports in 1970/71. Japan led with 101 million bushels. Next, in millions of bushels, were the Netherlands with 54, West Germany 52, Canada 41, Spain 39, Italy 23, Taiwan and

Denmark each with 20, and France and Belgium-Luxembourg each with 13.

The output from 54 of every 100 soybean acres in the U.S. goes abroad as beans or products.

Illinois was the leading producing State in 1970/71, followed closely by Iowa. Based on their production shares, the top 10 exporting States were Illinois \$237 million; Iowa \$208 million, Indiana \$116 million, Arkansas \$108 million, Missouri \$101 million, Minnesota \$92 million, Ohio \$77 million, Mississippi \$62 million, Louisiana \$42 million, and Tennessee \$32 million. (30)

## Recent Publications

**THE ECONOMIC AND SOCIAL CONDITION OF RURAL AMERICA IN THE 1970's: THE DISTRIBUTION OF FEDERAL OUTLAYS AMONG U.S. COUNTIES.** Economic Development Division; for Committee on Government Operations, United States Senate, 92nd Congress, 1st Session. Part 3.

This report is concerned with the distribution of Federal expenditures within the U.S. during fiscal year 1970. It scrutinizes a broad and extensive range of Federal programs—from social security to atomic energy—to determine whether the funding and the services they provide are equitably allocated among rural and urban residents. This study has significant implications for promoting a more balanced population distribution and for enhancing the economic development of America.

**CATTLE AND CALF SHIPMENTS FOR THE STATE OF ARIZONA.** Elmer L. Menzie and Russell Gum, University of Arizona in cooperation with Farm Production Economics Division. Tech. Bull. 190.\*

As the feedlot industry grows in such States as Texas, so will the de-

*The publications listed here are issued by the Economic Research Service and cooperatively by the State universities and colleges. Unless otherwise noted, reports listed here and under Sources are published by ERS. Single copies are available free from the Farm Index, OMS U.S. Department of Agriculture, Washington, D.C. 20250 State publications (descriptions below include name of experiment station or university of the title) may be obtained only by writing to the issuing agencies of the respective States.*

mand for calves now fed in Arizona. This may raise the demand within the State for locally produced calves. Further examination is needed of the benefits to be gained by greater coordination of activities between the calf producers and feeders in Arizona.

**THE AGRICULTURAL ECONOMY AND TRADE OF SPAIN.** James Lopes, Foreign Demand and Competition Division. ERS-For. 327.

Although Spanish agriculture has

advanced significantly in the past decade, farmers have not increased or adjusted output enough to cope with the quick-changing pattern of consumer wants. Many production gains have taken place in already surplus commodities, while output has remained insufficient in others, such as beef, dairy products, and animal feed.

**AGRICULTURAL TRADE OF THE WESTERN HEMISPHERE: A STATISTICAL REVIEW.** Gae A. Bennett, Anna P. Diekes, Rena E. Perley, and Betty J. Thomas, Foreign Demand and Competition Division. ERS-For. 328.

For the first time this publication provides a historical series showing U.S. agricultural trade with countries and regions of the Western Hemisphere by major Standard International Trade Classification (SITC). Statistics include trade by Western Hemisphere countries by major SITC groups, and trade by the leading countries by destination and origin as well as by principal commodities.

**THE AGRICULTURAL ECONOMY OF NIGERIA.** Snider W. Skinner,

Foreign Demand and Competition Division. ERS-For. 329.

Nigeria, the most populous country in Africa, has an economy based on production of raw materials, chiefly agricultural commodities and petroleum. Development of petroleum has been one of Nigeria's most significant economies in recent years and is now among the world's top 10 producers. In 1969, agricultural exports totaled \$426 million, accounting for 48 percent of \$895 million in total exports. Major farm exports

are cocoa beans, peanuts, oil palm products, and rubber. Main U.S. imports are wheat and flour.

**THE ARIZONA CATTLE FEEDING INDUSTRY.** Russell Gum and Elmer L. Menzie, University of Arizona Agricultural Experiment Station. Tech. Bull. 191.\*

The Arizona cattle feeding industry can be characterized by its steady growth in recent years, and the dominance of the industry by large feedlots.

**EVALUATION OF PROCEDURES FOR ESTIMATING CITRUS FRUIT YIELD: FRUIT COUNTS, GROUND PHOTOGRAPHY, REMOTE SENSING.** Richard D. Allen, Statistical Reporting Service.

Color photography and limb counts can be used to forecast citrus fruit production, according to USDA-sponsored research in Texas during 1969-70. Specific objectives of the project were to improve sampling definitions and procedures for objective yield surveys and collection of cost information.

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# Economic Trends

Item	Unit or Base Period	1971						1972	
		1967	Year	Feb	Dec	Jan	Feb		
<b>Prices:</b>									
Prices received by farmers	1967=100	—	112	112	116	120	122		
Crops	1967=100	—	108	105	109	111	111		
Livestock and products	1967=100	—	116	117	121	126	131		
Prices paid, interest, taxes and wage rates	1967=100	—	120	118	122	123	124		
Family living items	1967=100	—	119	117	121	121	123		
Production items	1967=100	—	115	113	117	118	118		
Ratio <sup>1</sup>	1967=100	—	94	95	95	98	98		
Wholesale prices, all commodities	1967=100	—	113.9	112.8	115.4	116.3	117.3		
Industrial commodities	1967=100	—	114.0	112.5	116.3	115.9	116.5		
Farm products	1967=100	—	112.9	113.9	115.8	117.8	120.7		
Processed foods and feeds	1967=100	—	114.3	113.3	115.9	117.2	118.8		
Consumer price index, all items	1967=100	—	121.3	119.4	123.1	123.2	123.8		
Food	1967=100	—	118.4	115.9	120.3	120.3	122.2		
<b>Farm Food Market Basket:</b> <sup>2</sup>									
Retail cost	Dollars	1,081	1,244	1,218	1,266	1,274	—		
Farm value	Dollars	419	477	475	492	511	—		
Farm-retail spread	Dollars	662	767	743	774	763	—		
Farmers' share of retail cost	Percent	39	38	39	39	40	—		
<b>Farm Income:</b> <sup>3</sup>									
Volume of farm marketings	1967	100	108	81	131	116	88		
Cash receipts from farm marketings	Million dollars	42,693	51,633	3,344	5,075	4,682	3,900		
Crops	Million dollars	18,434	21,875	1,077	2,586	2,105	1,200		
Livestock and products	Million dollars	24,259	29,758	2,267	2,489	2,577	2,700		
Realized gross income <sup>4</sup>	Billion dollars	49.0	58.6	—	60.9	—	—		
Farm production expenses <sup>4</sup>	Billion dollars	34.8	42.9	—	43.6	—	—		
Realized net income <sup>4</sup>	Billion dollars	14.2	15.7	—	17.3	—	—		
<b>Agricultural Trade:</b>									
Agricultural exports	Million dollars	—	7,695	635	842	770	715		
Agricultural imports	Million dollars	—	5,826	420	540	576	591		
<b>Land Values:</b>									
Average value per acre	1967 = 100	—	<sup>6</sup> 205	—	—	—	<sup>6</sup> 205		
Total value of farm real estate	Billion dollars	—	<sup>6</sup> 221.1	—	—	—	<sup>6</sup> 221.1		
<b>Gross National Product:</b> <sup>4</sup>									
Consumption	Billion dollars	793.9	1,046.8	—	1,072.9	—	—		
Investment	Billion dollars	492.1	662.1	—	677.2	—	—		
Government expenditures	Billion dollars	116.6	151.6	—	159.4	—	—		
Net exports	Billion dollars	180.1	233.0	—	240.8	—	—		
	Billion dollars	5.2	.0	—	—4.6	—	—		
<b>Income and Spending:</b> <sup>5</sup>									
Personal income, annual rate	Billion dollars	629.3	857.0	832.4	883.9	892.0	896.9		
Total retail sales, monthly rate	Million dollars	26,151	34,071	32,850	34,896	34,958	34,904		
Retail sales of food-group, monthly rate	Million dollars	5,759	7,437	7,387	7,523	7,399	—		
<b>Employment and Wages:</b> <sup>5</sup>									
Total civilian employment	Millions	74.4	79.1	78.5	80.1	<sup>7</sup> 80.6	<sup>7</sup> 80.6		
Agricultural	Millions	3.8	3.4	3.3	3.4	<sup>7</sup> 3.4	<sup>7</sup> 3.4		
Rate of unemployment	Percent	3.8	5.9	5.9	6.0	5.9	5.7		
Workweek in manufacturing	Hours	40.6	39.9	39.8	40.3	40.0	40.4		
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	3.57	3.51	3.69	3.70	3.71		
<b>Industrial Production:</b> <sup>5</sup>									
Manufacturers' Shipments and Inventories:	1967 = 100	—	106	106	108	108	109		
Total shipments, monthly rate	Million dollars	46,458	57,911	56,982	59,074	61,454	—		
Total inventories, book value end of month	Million dollars	84,563	100,549	100,602	100,549	100,752	—		
Total new orders, monthly rate	Million dollars	46,707	57,724	57,165	59,408	63,099	—		

<sup>1</sup> Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. <sup>2</sup> Average annual quantities of farm food products purchased by urban wage-earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. <sup>3</sup> Annual and quarterly data are on 50-State basis. <sup>4</sup> Annual rates seasonally adjusted fourth quarter. <sup>5</sup> Seasonally adjusted. <sup>6</sup> As of November 1, 1971. <sup>7</sup> Beginning January 1972 data not strictly comparable with prior data because of adjustment to

1970 Census data.  
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